

Control your own destiny or someone else will.

Jack Welch

01/23/14 Agenda

- Introduction to Chapter 6
 - Systems of Linear Equations
- I'll accept any late homework on Sections 5.4 & 5.5 until this Friday 1/24
- Quiz corrections:
 - Done outside of class
 - You can reference your notes
 - Half credit back if your answer is correct

Homework - Whatever you don't finish in class

To be successful in Chapter 6, there are some prerequisite skills that you will have to master:

Graphing Lines

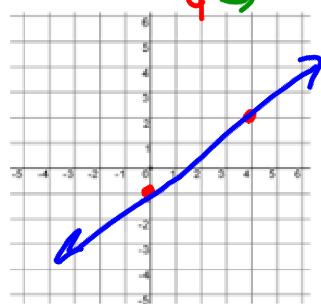
- A line is an infinite collection of points going in opposite directions. But all you need to graph a line is **two points** and any straight edge (like your ID or ruler).
- Any two points on that line will do. There are a couple methods you can use to find them.

1) For lines in Slope-Intercept Form: $y = mx + b$

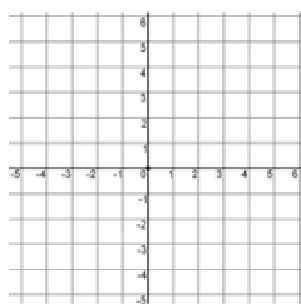
- Begin at the y-intercept, point $(0, b)$ [up or down from the origin]
- Use slope (m) in fraction form to find the second point needed
 - $m = \frac{\text{Up}(+)/\text{Down}(-)}{\text{Right}}$ Up or Down from point $(0, b)$ then to the Right

Graph each line by using the y-intercept (b) and the slope (m) .

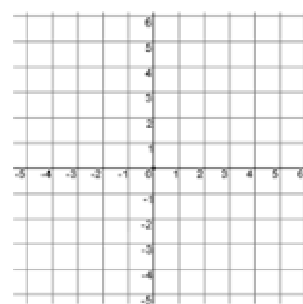
a) $y = \frac{3}{4}x - 1$
 $b = -1$
 $m = \frac{3}{4}$



b) $y = -\frac{1}{2}x + 3$



c) $y = -2x$



2) For lines in Standard Form: $Ax + By = C$

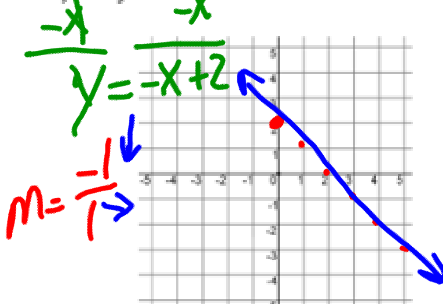
Method 1: Solve for y to put in slope-intercept form

- Move " Ax " term over to other side (either add or subtract as needed)
- Divide all terms by B to get y by itself

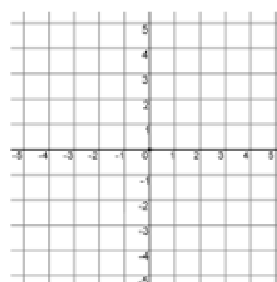
Method 2: Use the formulas: $m = \frac{-A}{B}$; $b = \frac{C}{B}$

Solve for y (put in $y = mx + b$ form) then graph the line.

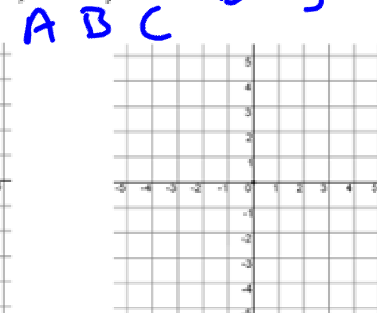
d) $x + y = 2$



e) $x + 2y = -4$



f) $6x - 3y = -6$

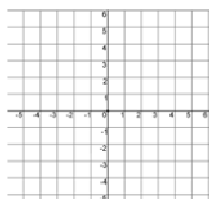


**Horizontal lines have a slope $= 0$, so they are of the form $y = b$. Vertical lines are in the form $x = k$ **

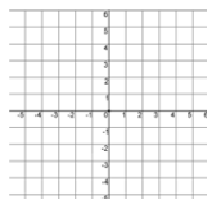
Prerequisite Skills for Chapter 6

Graph each equation. (Lesson 6.1)

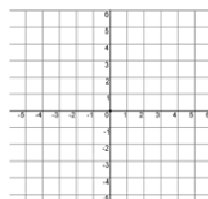
1. $y = 1$



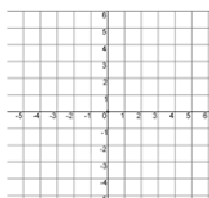
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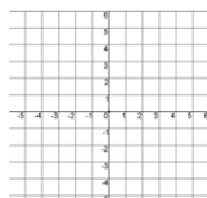
3. $y = 4 - x$



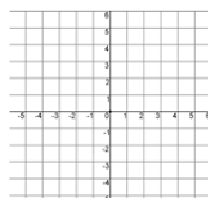
4. $y = 2x + 3$



5. $y = 5 - 2x$



6. $y = \frac{1}{2}x + 2$



Solve for the indicated variable. (Lesson 6.2)

7. $4x + 3y = 16$, for x

8. $4x + 3y = 16$, for y

$$\begin{array}{r} 4x + 3y = 16 \\ -4x = -4x \\ \hline 3y = -4x + 16 \\ \frac{3y}{3} = \frac{-4x + 16}{3} \\ y = -\frac{4}{3}x + \frac{16}{3} \end{array}$$

9. $3x - y = 9$, for x

10. $3x - y = 9$, for y

Simplify each expression. (Lesson 6.3)

11. $(3x + y) - (2x + y)$

12. $(7x - 2y) - (7x + 4y)$

13. $(16x - 3y) + (11x + 3y)$

14. $(8x - 4y) + (-8x + 5y)$

15. $4(2x + 3y) - (8x - y)$

16. $3(x + 4y) + 2(2x - 6y)$

11. $(3x + y) - (2x + y)$

$$\begin{array}{r} 3x + y - 2x - y \\ \hline 1x + 0y \rightarrow x \end{array}$$

$$\begin{array}{r} -\frac{1}{3} \\ -\frac{14}{3} - \frac{1}{3} \\ -\frac{1}{3}y \\ -\frac{1}{3} \cdot \frac{y}{1} \end{array}$$

Algebra 1-2
Chapter 6: Systems
Chapter Preview

Name: _____

Period: _____ Date: _____

To be successful in Chapter 6, there are some prerequisite skills that you will have to master:

Graphing Lines

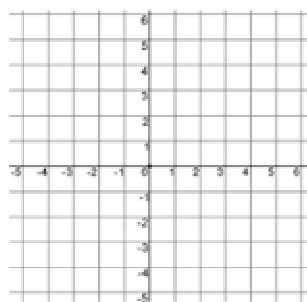
- A **line** is an infinite collection of points going in opposite directions. But all you need to graph a line is **two points** and any straight edge (like your ID or ruler).
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1) For lines in **Slope-Intercept Form**: $y = mx + b$

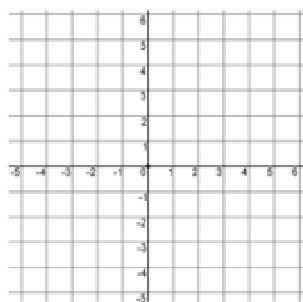
- Begin at the y-intercept, point **(0, b)** [up or down from the origin]
- Use slope (**m**) in fraction form to find the second point needed
 - $m = \frac{\text{Up}(+)/\text{Down}(-)}{\text{Right}}$ Up or Down from point (0, b) then to the Right

Graph each line by using the y-intercept (**b**) and the slope (**m**).

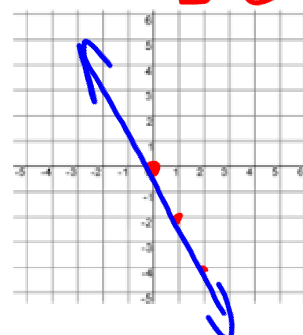
a) $y = \frac{3}{4}x - 1$



b) $y = -\frac{1}{2}x + 3$



c) $y = -2x + 0$



2) For lines in **Standard Form**: $Ax + By = C$

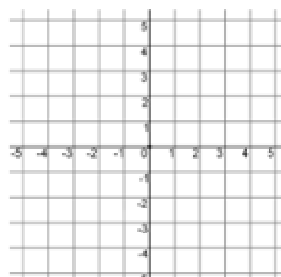
Method 1: Solve for **y** to put in slope-intercept form

- Move "**Ax**" term over to other side (either add or subtract as needed)
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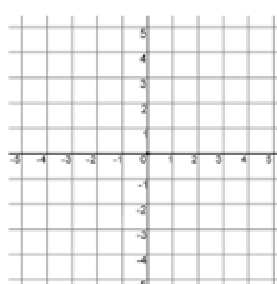
Method 2: Use the tricks $a = \frac{-A}{B}$; $b = \frac{C}{B}$

Solve for y (put in $y = mx + b$ form) then **graph** the line.

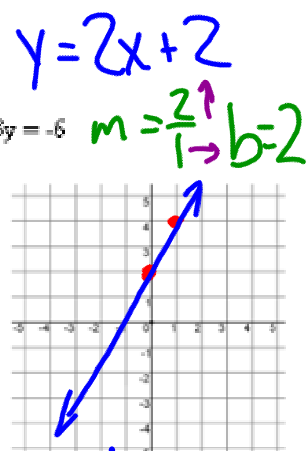
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****Horizontal lines have a slope = 0, so they are of the form $y = b$. Vertical lines are in the form $x = k$ ****

$$y = mx + b \quad + \cancel{6x} - 3y = -6$$

$$\underline{\quad \quad \quad -6x \quad \quad \quad} \quad \underline{\quad \quad \quad -6x \quad \quad \quad}$$

$$\underline{-3y = -6x - 6}$$

$$\underline{-3} \quad \underline{-3} \quad \underline{-3}$$

$$y = 2x + 2$$

#8. $\cancel{4x} + 8y = 16$ $y = \frac{1}{2}x + 2$

$$\underline{\quad \quad \quad -4x \quad \quad \quad} \quad \underline{\quad \quad \quad -4x \quad \quad \quad}$$

$$\underline{8y = -4x + 16}$$

$$\underline{8} \quad \underline{8} \quad \underline{8}$$

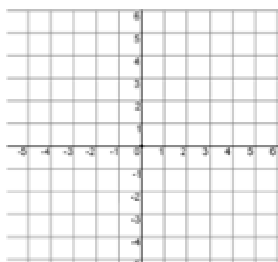
$$y = -\frac{1}{2}x + 2$$

Prerequisite Skills for Chapter 6

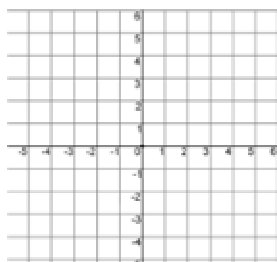
Graph each equation. (Lesson 6.1)

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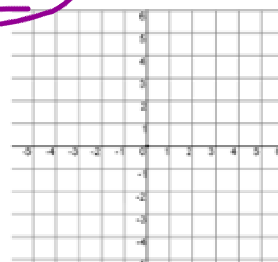
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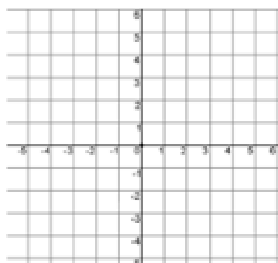
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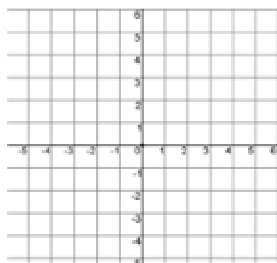
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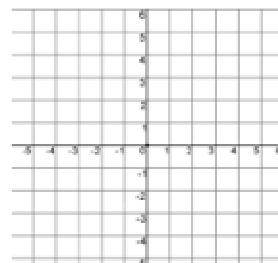
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6. $y = \frac{1}{2}x + 2$



Solve for the indicated variable. (Lesson 6.2)

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$$x = \text{~~~~~}$$

8. $4x + 8y = 16$, for y

$$y = \text{~~~~~}$$

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15. $4(2x + 3y) - (8x - y)$

16. $3(x + 4y) + 2(2x - 6y)$

#15 $4(2x+3y) - 1(8x-y)$

$$8x + 12y - 8x + y$$

$$0x + 13y = 13y$$

$$y = +4 - x$$

$$y = mx + b$$

$$y = -x + 4$$

$$m = -1 \quad b = 4$$

$$y = 4 - x$$